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APPLIED FORESTRY NOTES

NORTHERN ROCKY MOUNTAIN
FOREST AND RANGE EXPERIMENT STATION

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THE CHARACTER OF THE 1938 FIRE SEASON IN REGION ONE

By

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On the basis of the daily measurements of fire danger on the 17 National Forests in the northern Rocky Mountain region the 1938 fire season was both shorter in duration and of lower danger than has been common during the past few years.

Although an exceptional June drought in extreme northern Idaho and northwestern Montana threatened early and high fire danger, good rains the first week of July relieved this situation. By July 10 to 13, nevertheless, practically all Forests were experiencing class 4 danger which warrants the placing of the regular summer protective organization. From then until the sustained occurrence of class 3, or lower danger, on September 21, gave a fire season length of 73 days. Comparable figures for previous years are: 1937 - 86 days; 1936 - 80 days; 1935 - 100 days; and 1934 - 88 days.

July and August, the months of usually highest danger in this region, were average or below, this year. Only the Cabinet, Coeur d'Alene, Kaniksu, and Kootenai Forests rated about 50% of worst probable danger. No Forests rated critical - 66% or more, 15 rated average - 33% to 66%, and 2, in south-central Montana rated easy, or below 33%. The ratings for the western Montana and North Idaho Forests are shown by table 1, together with comparable data for the preceding four seasons.

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Table 1.--Percentage of worst probable fire danger

Forest	Year				
	1934	1935	1936	1937	1938
	Percentage				
Bitterroot	59	59	44	61	38
Cabinet	74	48	70	50	52
Clearwater	78	52	51	50	39
Coeur d'Alene	63	48	52	36	49
Flathead	85	52	69	58	47
Kaniksu	59	30	56	39	49
Kootenai	67	44	77	47	51
Lolo	78	59	77	58	43
Nezperce	81	70	56	54	36
St. Joe	63	59	49	43	41

A marked deficiency in rainfall from April 1 to August 31, localized in the Clarks Fork drainage and most acute in its lower end, was the principal factor causing moderately high danger in these sections. Even within this area, however, good rains occurred sporadically on small subdivisions, sometimes reaching almost cloudburst proportions. Short, heavy rains often are of less benefit, however, than protracted drizzles of lesser amount because the former occur too rapidly to be absorbed by snags, windfalls, and other heavy fuels.

Lightning was the second most important factor of danger in 1938 and was a universal and almost continuous threat on all the Forests of the entire Region from early June until the end of September. On the western Montana and northern Idaho Forests there are normally lightning storms on 58 of the 83 days between June 20 and September 11. This year there were storms on 65 days of this period. The near-record number of 100 lightning fires started the night of July 15 on the Kaniksu Forest is evidence of the activity of these storms. The prompt control of all these fires by the Kaniksu organization, with six ranger districts rating class 4.6 to 4.9 in danger on the day of control, is evidence of the dividends now being collected from recent investments in better fire control planning, better facilities, and better training of men. A similar epidemic of some 150 fires in 1926 resulted in the burning of more than 60,000 acres under danger conditions which, although not measured at that time, are not believed to have been any worse than this year.

A second regional epidemic of 182 lightning fires during the first ten days of September, which normally brings only 45 fires from this cause, also was handled successfully by the fire control organization.

While the 1938 season was like that of 1937 in lacking those dangerous periods of several consecutive days of class 6 or higher danger, it was even safer because during mid-August, when danger is usually greatest, sporadic but protracted rains produced a marked reduction in danger. This was followed, however, by a return to normal danger and then by the most dangerous September on record.

During the first few days of September, and again between the 14th and 23rd, many Weather Bureau stations reported all-time, record-breaking temperatures of over 90 degrees F. Mean temperatures for the month ran as much as 9.6 degrees above normal. Some Forests, and many ranger districts, experienced the highest fire danger of the year during this distinctly abnormal September.

Under such erratic fluctuations of danger the 1938 season, even though it is rated as slightly below normal in average fire danger, was clearly not one which safely permitted marked retrenchment in fire control presuppression expense, especially in northern Idaho and northwestern Montana.